100,000 persons. **RESULTS:** From 2007–2009, incidence of reportable invasive SP pneumonia decreased linearly from 11.7/100,000 to 7.1/100,000. Incidence increased with age; adults aged ≥65 years consistently had the highest incidence (2007: 39.4/100,000; 2009: 24.4/100,000), with the lowest rates observed in adults aged 20–49 years (2009: 3.35/100,000). In-hospital mortality rates were ~6% throughout the study, with the highest rates in adults aged ≥65 years (2009: 8.8%). SP was the most common pathogen reported (1,358/1,544 [88%] isolates). The proportion of 7-valent pneumococcal conjugate vaccine (PCV7) serotypes decreased from 46.7% to 20.1%, while the number and proportion of non-PCV7, 13-valent pneumococcal conjugate vaccine (PCV13) serotype disease increased, led by 19A (n=7 [1.3%] to n=23 [6.9%]). The most frequently identified serotypes in 2009 were 7F (16.8%), 1 (11.4%), 22F (11.4%), 4 (8.4%), 19A (6.9%), and 3 (6.6%). In children aged 0–4 years, 8, 1, and 0 cases of PCV7 invasive SP pneumonia occurred in 2007, 2008, and 2009, respectively. PCV13 serotypes caused 64.9% of invasive SP pneumonia in 2009, the majority in adults aged ≥60 years. **CONCLUSIONS:** Although incidence of reportable invasive pneumonia decreased in Norway from 2007–2009, after the pediatric PCV7 National Immunization Program was fully underway, substantial disease burden remains, particularly in older adults. Almost 65% of invasive SP pneumonia cases were caused by pneumococcal conjugate vaccine serotypes.

PIN13

THE CLINICAL BURDEN OF HOSPITALIZED ALL-CAUSE PNEUMONIA IN THE LOMBARDIA AND PUGLIA REGIONS OF ITALY, 2007–2009

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OBJECTIVES: Pneumonia is associated with substantial burdens on patient morbidity and mortality, and health care resources across all age groups. A retrospective database study was conducted to assess the burden of disease associated with hospitalized all-cause pneumonia in terms of incidence, in-hospital mortality, length-of-stay (LOS), and hospitalization cost in the Italian regions of Lombardia and Puglia from 2007–2009. **METHODS:** Data were obtained from two Local Health Units (LHUs) in Lombardia and Puglia. All patients with an ICD-9 code diagnosis of pneumonia (480, 481, 482, 483, 484, 485, 486, and 487) from January 1, 2007–December 31, 2009 were included. Incidence rates were calculated based on the number of people per LHU and reported annually as cases per 1,000 persons. **RESULTS:** In total, 10,195 patients hospitalized for pneumonia were included in this study. Incidence of hospitalizations increased slightly from 2007–2009 (2007: 1.91/1,000; 2008: 1.86/1,000; 2009: 2.00/1,000). In children aged 0–4 years, incidence decreased from 5.57/1,000 in 2007 to 3.85/1,000 in 2009, while incidence in adults aged ≥65 years increased from 5.36/1,000 to 6.59/1,000. In-hospital deaths occurred in 196 patients (5.9%) in 2007 and 202 (5.2%) patients in 2009, with the highest mortality observed in adults aged ≥65 years (176 patients [9.5%] and 191 [8.1%], respectively). No in-hospital deaths occurred in children aged 0–4 years. Mean LOS was similar (2007: 10.5 days; 2008: 10.8 days; 2009: 11.0 days), and increased with age. Mean cost per patient was €2,966 in 2007, €3,073 in 2008, and €3,218 in 2009. **CONCLUSIONS:** Reductions in hospitalized pneumonia were observed in children aged 0–4 years; however, overall incidence of hospitalized pneumonia slightly increased during the study period driven by increased hospitalizations in older adults. Adults aged ≥65 years had the highest disease burden in terms of incidence, in-hospital mortality, mean hospital LOS, and costs.

PIN14

PROJECTING THE CLINICAL IMPACT OF TREATING HEPATITIS C GENOTYPE 1 INFECTION WITH BOCEPREVIR IN GERMANY

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OBJECTIVES: International randomized, multicenter, double-blinded studies demonstrated that boceprevir, added to peginterferon alpha-2b and ribavirin significantly increased sustained virologic response rates over peginterferon/ribavirin alone in treatment-naïve (SPRINT-2) and treatment-experienced (RESPOND-2) adult patients with chronic hepatitis C virus genotype 1 infection. Our objective was to project the reduction in the lifetime incidence of liver-related morbidity and mortality associated with treatment with boceprevir/peginterferon/ribavirin vs. treatment with peginterferon/ribavirin vs. no treatment. **METHODS:** A multi-cohort Markov model was developed using German life tables and baseline patient demographics from the trials— mean age, gender, and fibrosis stage distribution. The first part of the model simulated three strategies—treatment with boceprevir/peginterferon/ribavirin (as defined by the European Medicines Agency), treatment with peginterferon/ribavirin, and no treatment. The second part of the model simulated the natural history of HCV. All hepatitis C-related state transition probabilities were obtained from previously published studies. Lifetime cumulative incidence of decompensated cirrhosis, hepatocellular carcinoma, liver-transplant and liver-related death was estimated. The model was validated with previously published studies and probabilistic sensitivity analysis was performed. **RESULTS:** Per 10,000 treatment-experienced patients, treatment with boceprevir/peginterferon/ribavirin vs. treatment with peginterferon/ribavirin vs. no treatment, respectively, were associated with substantial reductions in projected cases of decompensated cirrhosis (1082 vs. 2286 vs. 2845), hepatocellular carcinoma (719 vs. 1440 vs. 1787), liver-transplant (154 vs. 321 vs. 398), and liver-related death (1144 vs. 2360 vs. 2920). Likewise, substantially fewer cases of decompensated cirrhosis (1024 vs. 1835 vs. 2873), hepatocellular carcinoma (656 vs. 1161 vs. 1806), liver-transplant (146 vs. 257 vs. 402), and liver-related death (1073 vs. 1892 vs. 2954) were projected per 10,000 treatment-naïve patients. **CONCLUSIONS:** Boceprevir-based regimens are projected to substantially reduce the incidence of liver-related complications and mortality in previously untreated and treatment-experienced patients chronically infected with hepatitis C virus genotype 1 in Germany.

PIN15

PREVALENCE OF HOSPITAL-ACQUIRED INFECTIONS IN INTENSIVE CARE UNITS AND ATTRIBUTABLE MORTALITY: DIFFERENT SOURCES OF DATA IN UNITED-STATES

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OBJECTIVES: To consider reliable sources of data to assess epidemiology of hospital-acquired infections (HAI) in intensive care units (ICU). **METHODS:** In order to get epidemiological data, a literature review (2002–2009) focused on bloodstream infection (BSI), catheter related BSI (CR-BSI) and ventilator-associated pneumonia (VAP) in hospital ICU in the US was performed using EMBASE database, completed with data from Centers for Disease Control & Prevention (CDC). US hospital databases (2007) were also considered to put findings in perspective: Premier PerspectiveTM Hospital Database (PPHD) and State Inpatient Database (SID: part of health care cost and utilization project (HCUP)) providing ICU data for this study. **RESULTS:** The rate of ICU hospitalized patients in the US databases (9.4%) was within the results in literature (8%-15%). The proportion of ICU patients with devices was higher in literature than in SID and PPHD databases with for central line catheters: 48%, 19%, 26.2% and for mechanical ventilation: 33%, 21.9% and 15% respectively. CR-BSI were reported in 4.8% of ICU patients with central venous catheter, in literature (1.4 - 5.5 /1,000 central line days), 9.4% in SID (5.7/1,000 catheter/central line days) and 33.8% in PPDH*. Rate of VAP in ICU was estimated at 2.1-10.7/1,000 ventilator days in literature and 12.2/1,000 ventilator days in SID. Proportion of VAP amongst ICU mechanically ventilated patients was similar within the databases (12%). BSI attributable mortality was comparable in the literature (12-25%) and hospital database (24.7% in PPHD). Attributable mortality for VAP was not found in the literature. This latter was estimated from the hospital database (19.6% in PPHD). **CONCLUSIONS:** Different sources are available to estimate the prevalence of HAI in ICU. Results should be interpreted with caution due to methodology limitations (e.g. HAI case definitions). Nevertheless, real-life databases appear appropriate to estimate attributable mortality of HAI in ICU. * central venous/line catheter.

PIN16

TUBERCULOSIS TREATMENT OUTCOMES IN PATIENTS WITH AND WITHOUT DIABETES MELLITUS

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OBJECTIVES: To evaluate treatment outcomes in tuberculosis patients with and without diabetes mellitus. **METHODS:** This was a retrospective cohort study conducted at respiratory clinic of Hospital Pulau Pinang (HPP), Malaysia. All Tuberculosis (TB) patients who were presented to the clinic from January 2006 to December 2007 were included in the study. A purpose developed valid data collection form was used for collecting demographic and clinical data. Treatment outcomes initially recorded as cured, treatment completed, defaulted, transferred out, expired and treatment continued were then classified into two categories; successful and unsuccessful treatment. Cured and treatment completed patients were placed in treatment successful category while the rest were placed in the category of unsuccessful treatment. Data was analyzed by using SPSS 16®. **RESULTS:** Final analysis included 1266 patients.Three hundred and thirty eight patients (26.7%) had DM along with TB. In multivariate analysis TB-DM was more likely to be present in Chinese (OR = 1.470, *p*-value = 0.003), married patients (OR = 1.408, *p*-value = 0.011) and patients having age 46-60 years (OR = 2.002, *p*-value <0.001), and > 60 years (OR = 1.594, *p*-value = 0.010). Nine hundred and eighty five (78.8%) patients were successfully treated. Successful Treatment was observed in patients having age of 46-60 years (OR = 1.567, *p*-value = 0.001), whereas male gender (OR = 0.721, *p*-value = 0.049) and patients with relapse TB (OR = 0.494, *p*-value = 0.002) were less likely to have successful treatment. **CONCLUSIONS:** In the present study Chinese ethnicity, age (> 46 years) and being married were the predictors of prevalence of TB-DM. Majority patients were successfully treated. Male gender and patients with relapse TB were the predictors of treatment failure. No statistically significant difference in treatment outcomes was observed between TB patients with and without diabetes mellitus.

PIN17

TUBERCULOSIS TREATMENT OUTCOMES IN FOUR STATES OF MALAYSIA

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OBJECTIVES: Despite the availability of highly efficacious pharmacotherapy, tuberculosis (TB) still remains as a major public health problem globally. The aim of the present study was to evaluate TB treatment outcomes in four high burden TB states of Malaysia. **METHODS:** This was a retrospective prospective study conducted at TB clinics of Penang, Sabah, Sarawak and Selangor. All TB patients who were presented to the clinics from January 2006 to December 2008 were included in the study. A purpose developed valid data collection form was used for collecting demographic and clinical data. World Health Organization (WHO) defined criteria was used for defining treatment outcomes. Data was analyzed by using SPSS 16®.